

13

Date: Thursday, 3/13/2008 10:22:37 AM
 User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services Drawing Name: FWD X-TUBE EXT HEIGHT(-013)
 Job Number: 37948
 Estimate Number: 10565
 P.O. Number:
 This Issue: 3/13/2008 S.O. No.: Part Number: D205596105
 Prsht Rev.: NC Drawing Number: D205596105
 First Issue: 1/1 Type: LANDING GEAR Project Number: N/A
 Previous Run: 37947 Drawing Revision: B
 Material:
 Due Date: 3/27/2008 Qty: 1 Um: Each
 Written By:
 Checked & Approved By: 08 03 13
 Comment: Est Rev:D 05.03.21 Added bending procedure KJJ/JLM
 Est Rev:E 08-01-10 ECN 1075 DD

Additional Product

Job Number:



Seq. # Machine Or Operation: Description:

1.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile & type labels per PPP D205-596-105 CHG002

08/03/19

2.0

D2889

FWD Crosstube



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2889 Aft Crosstube 38036

0804-08

3.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Mark 23.92" for cutting from tangential line in the straight section from D2889 as per Dwg wall template.

see attachment
mf 08-04-07

4.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

0804-08

5.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-105

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

see attachment
mf 08-04-07

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXT HEIGHT(-013)

Job Number: 37948

Part Number: D205596105

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

S 08644

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

AWM 8-4-11

Chemical Conversion Coat per QSI 005 4.1

8.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

ml 08 04 14

(1)

1-Prime inside and outside with Immron per QSI 005 4.2

9.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

45 08 04-15

10.0

D3595063450

RUBBER CUSHION



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

RUBBER CUSHION

batch *35124*

ml 08 04 16

11.0

MS2192025

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Clamp(per MIL-DTL-8783C)

batch *107236x2 107456x2*

ml 08 04 16

12.0

D28931

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number

Description

Batch

2 D2893-1

Support *36647*

ml 08 04 16

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
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| | | | | | | | | |

NOTE: Date & initial all entries

Date: Thursday, 3/13/2008 10:22:37 AM

User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXT HEIGHT(-013)

Job Number: 37948

Part Number: D205596105

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Apply magnebond 6398 as per dwg D205-596-105

Magnebond 6398 Batch: _____

2- Install supports and clamps per Dwg D205-596-105. Torque clamps to 80-100 in lb. as per dwg

see attachment
MF 08-04-07

MF 08 04 16 ①

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/04/17 (E)

15.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-105

Location: _____

PPP Rev: 0

8/4/17

24

①

16.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/04/18 (F)

Job Completion



MF 08-04-17

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

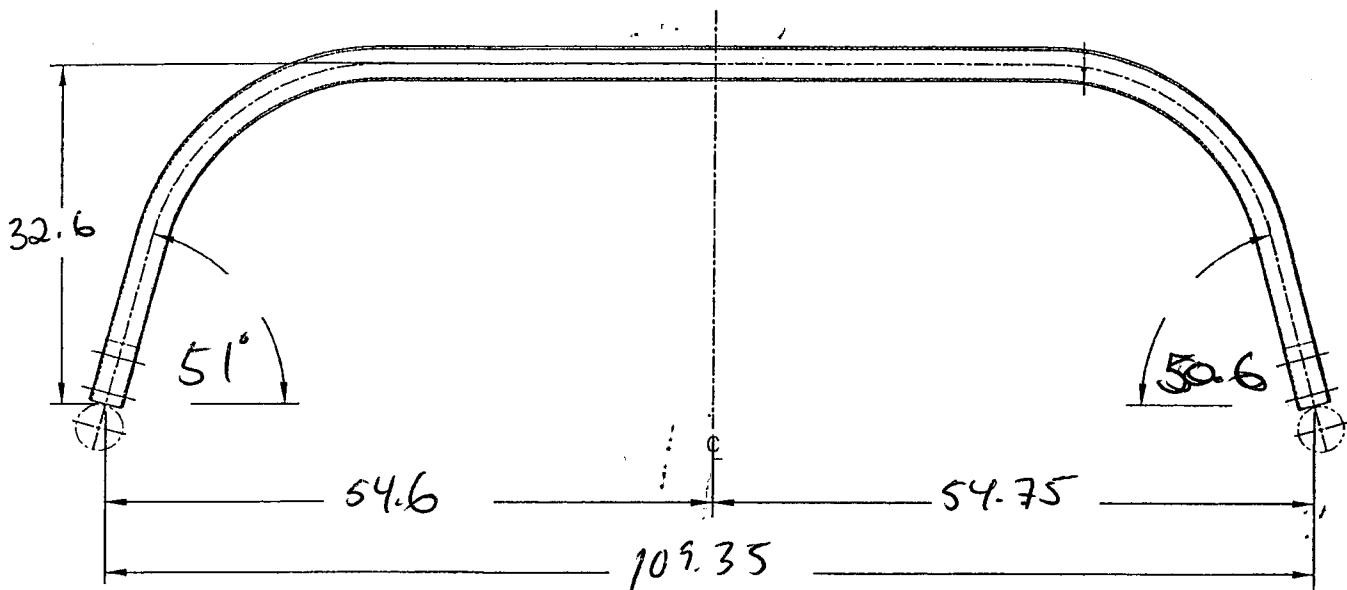
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

| | | | |
|--------------------------------------|--|--------------|--------------|
| DART AEROSPACE LTD | | Work Order: | 37948 |
| Description: Crosstube High-High Fwd | | Part Number: | D205-596-105 |
| Inspection Dwg: D205-596-105 Rev: A | | Page 1 of 1 | |

08.03.13

| Required Dimension | Min | Max |
|--------------------|-------|-------|
| Height | 32.4 | 32.6 |
| 1/2 Span | 54.6 | 54.8 |
| Angle | 49 | 52 |
| Total Span | 109.2 | 109.6 |



| Comments |
|----------|
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| | |
|-----------------|----------|
| QC15 Inspection | |
| Date | 08.04.08 |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|-----------|------------|----------|
| A | 07.02.06 | New Issue | KJ/JM | |

PARTS LIST:

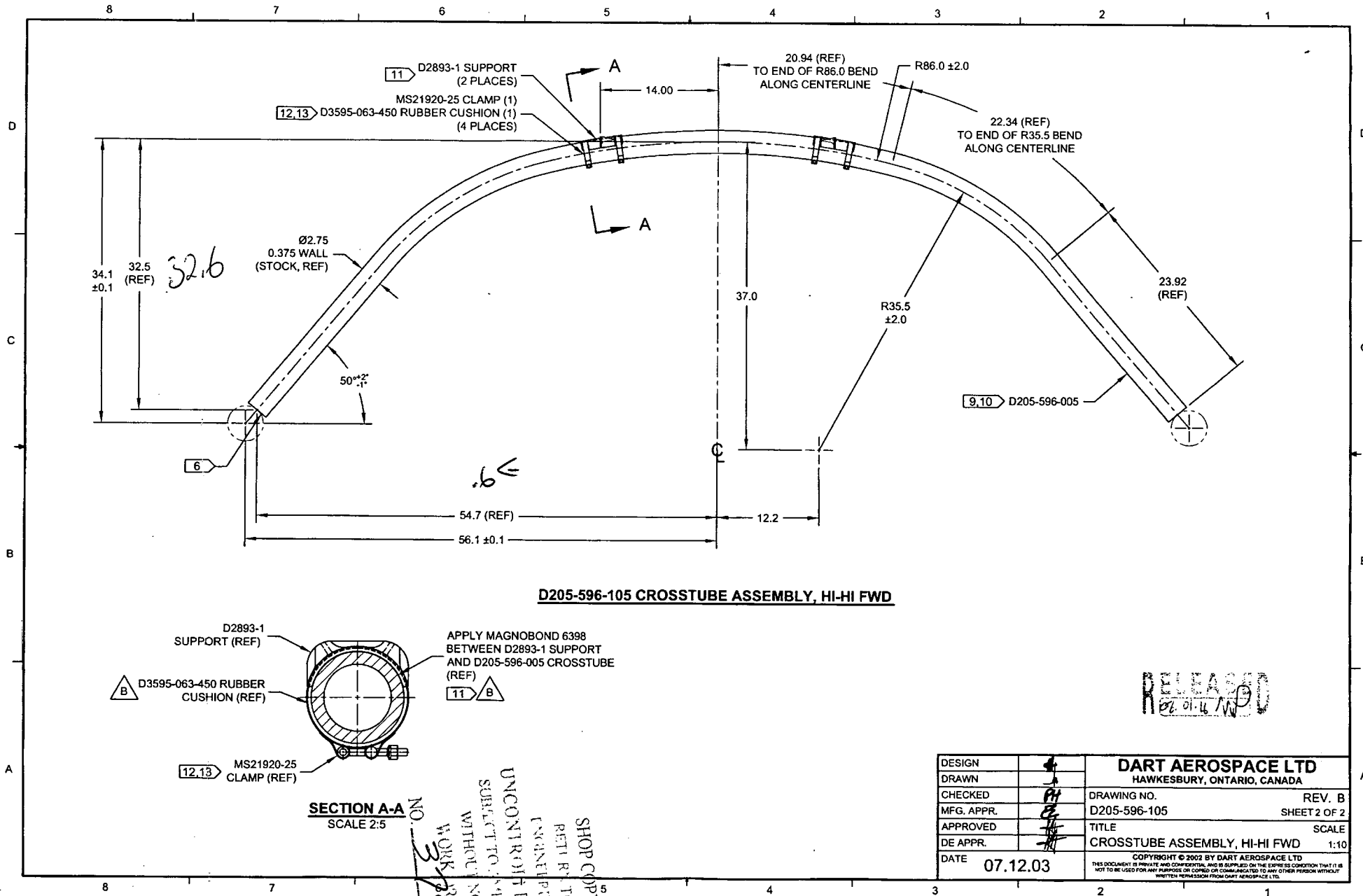
| Qty | Part Number | Description |
|-----|----------------|---|
| X | D205-596-105 | CROSSTUBE ASSEMBLY, HI-HI FWD |
| 1 | D6005-180 | CROSSTUBE |
| 2 | D2893-1 | SUPPORT |
| 4 | D3595-063-450 | RUBBER CUSHION |
| 4 | MS21920-25 | CLAMP |
| A/R | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE) |

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURE FROM D6005-180
FINISHED LENGTH = 134.40 ± 0.02
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH
VIBRATING STYLUS
- 7) WEIGHT: 40 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT
WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION
AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE D2893-1
SUPPORT ON THE TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
**NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-25 CLAMPS WITH LONGER (MS21920-26) OR
SHORTER (MS21920-24) CLAMPS TO ACCOMODATE VARYING DIAMETERS. ENSURE THERE IS A
MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.**
- 13) TORQUE CLAMPS 80 TO 100 IN-LB

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 37948

| | | | |
|------------|---|--|--------------|
| B | SUPPORT NOW MAGNOBONDED; REMOVE D2856-600-851 ABRASION STRIP; UPDATED NOTES; ADDED D3595-063-450 CUSHION; MS21920-25 WAS MS21920-24 | MB | 07.12.03 |
| A | NEW ISSUE | DS | 02.11.20 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | <i>[Signature]</i> | DART AEROSPACE LTD | |
| DRAWN | <i>[Signature]</i> | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | <i>[Signature]</i> | DRAWING NO. | REV. B |
| MFG. APPR. | <i>[Signature]</i> | D205-596-105 | SHEET 1 OF 2 |
| APPROVED | <i>[Signature]</i> | TITLE | SCALE |
| DE APPR. | <i>[Signature]</i> | CROSSTUBE ASSEMBLY, HI-HI FWD | NTS |
| DATE | 07.12.03 | COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | |



Date: Friday, 04/04/2008 12:54:15 PM
User: Melanie Fauteux

Process Sheet

| | | | |
|-----------------------|---|------------------|-------------------------------|
| Customer | : CU-DAR001 Dart Helicopters Services | Drawing Name | : FWD X-TUBE EXT HEIGHT(-013) |
| Job Number | : 37948 | | |
| Estimate Number | : 10565 | | |
| P.O. Number | : | Part Number | : D205596105 |
| This Issue | : 04/04/2008 S.O. No. : | Drawing Number | : D205596105 |
| Prsht Rev. | : NC | Project Number | : N/A |
| First Issue | : 13/03/2008 Type : LANDING GEAR | Drawing Revision | : B |
| Previous Run | : 37947 | Material | : |
| Written By | : | Due Date | : 27/03/2008 Qty: 1 Um: Each |
| Checked & Approved By | : | | |
| Comment | : Est Rev:D 05.03.21 Added bending procedure KJ/JLM Est Rev:E 08-01-10 ECN 1075 DD | | |

Additional Product

~~REFERENCE ONLY~~ *mf*

Job Number:



Seq. #:

Machine Or Operation:

Description :

3.0

CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Mark 23.92" for cutting from tangential line in the straight section from D2889 as per Dwg wall template.

Job Completion



Date: Friday, 04/04/2008 12:54:31 PM
User: Melanie Fauteux

Process Sheet

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|-----------------------|---|------------------|-------------------------------|
| Customer | : CU-DAR001 Dart Helicopters Services | Drawing Name | : FWD X-TUBE EXT HEIGHT(-013) |
| Job Number | : 37948 | | |
| Estimate Number | : 10565 | | |
| P.O. Number | : | Part Number | : D205596105 |
| This Issue | : 04/04/2008 | S.O. No. | : |
| Prsht Rev. | : NC | Drawing Number | : D205596105 |
| First Issue | : 13/03/2008 | Project Number | : N/A |
| Previous Run | : 37947 | Drawing Revision | : B |
| | | Material | : |
| Written By | : | Due Date | : 27/03/2008 |
| Checked & Approved By | : | Qty: | 1 Um: Each |
| Comment | : Est Rev:D 05.03.21 Added bending procedure KJ/JLM Est Rev:E 08-01-10 ECN 1075 DD | | |

Additional Product

Job Number:

~~REFERENCE ONLY~~ *mf*

Seq. #:

Machine Or Operation:

Description :

5.0

CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-105

*DP 8-4-9**AWM 8-4-10*

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

Job Completion



Date: Friday, 04/04/2008 12:54:47 PM
User: Melanie Fauteux

Process Sheet

| | | | |
|-----------------------|---|------------------|-------------------------------|
| Customer | : CU-DAR001 Dart Helicopters Services | Drawing Name | : FWD X-TUBE EXT HEIGHT(-013) |
| Job Number | : 37948 | | |
| Estimate Number | : 10565 | | |
| P.O. Number | : | Part Number | : D205596105 |
| This Issue | : 04/04/2008 S.O. No. : | Drawing Number | : D205596105 |
| Prsht Rev. | : NC | Project Number | : N/A |
| First Issue | : 13/03/2008 Type : LANDING GEAR | Drawing Revision | : B |
| Previous Run | : 37947 | Material | : |
| Written By | : | Due Date | : 27/03/2008 Qty: 1 Um: Each |
| Checked & Approved By | : | | |
| Comment | : Est Rev:D 05.03.21 Added bending procedure KJ/JLM Est Rev:E 08-01-10 ECN 1075 DD | | |

Additional Product

~~REFERENCE ONLY~~ *mf*

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Apply magnobond 6398 as per dwg D205-596-105

Magnobond 6398 Batch: 106695 Time: 10:30AM

exp: 04/2009

ml 08 04 16 ①

2- Install supports and clamps per Dwg D205-596-105. Torque clamps to 80-100 in lb. as per dwg

Job Completion

